INFORMATION DISCLOSURE STATEMENT

Applicant	:	Satta et al.
App. No.	:	Unknown
Filed	:	Herewith
For	:	METHOD FOR BOTTOMLESS DEPOSITION OF BARRIER LAYERS IN INTEGRATED CIRCUIT METALLIZATION SCHEMES
Examiner	:	Unknown
Group Art Unit	:	Unknown

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Enclosed is form PTO-1449 listing 69 references that are of record in U.S. patent application No. 10/123,492, filed April 15, 2002, which is the parent of this Continuation application, and is relied upon for an earlier filing date under 35 U.S.C. § 120. Copies of the references are not submitted pursuant to 37 C.F.R. § 1.98(d).

This Information Disclosure Statement is being filed with an RCE or within three months of the filing date of this application and no fee is required in accordance with 37 C.F.R. § 1.97(b)(1), (b)(2), or (b)(4).

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 8, 2003

By: _____

Andrew N. Merickel
Registration No. 53,317
Attorney of Record
Customer No. 20,995
(415) 954-4114

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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. IMEC182.001C1C1	APPLICATION NO. Unknown
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	APPLICANT Satta et al.	
(USE SEVERAL SHEETS IF NECESSARY)	FILING DATE Herewith	GROUP Unknown

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	1.	4,058,430	11/15/77	Suntola et al.			
	2.	4,413,022	11/1/83	Suntola et al.			
	3.	4,747,367	5/31/88	Posa			
	4.	4,761,269	8/2/88	Conger et al.			
	5.	5,674,781	10/7/97	Huang et al.	437	192	2/28/96
	6.	5,711,811	1/27/98	Suntola et al.			
	7.	5,879,459	3/9/99	Gadgil et al.			
	8.	5,904,565	5/18/99	Nguyen et al.			
	9.	5,916,365	6/29/99	Sherman			
	10.	5,933,761	8/3/99	Lee	438	783	7/10/98
	11.	6,048,790	4/01//00	Lacoponi et al.	438	643	7/10/98
	12.	6,077,775	6/20/00	Stumborg et al.			
	13.	6,083,818	7/4/00	Stumborg et al.			
	14.	6,093,683	7/25/00	Cho et al.	438	627	12/10/98
	15.	6,100,184	8/8/99	Zhao et al.			
	16.	6,139,700	10/31/00	Kang et al.	204	192.17	9/30/98
	17.	6,184,128 B1	2/6/01	Wang et al.			
	18.	6,188,134 B1	2/13/01	Stumborg et al.	257	751	8/20/98
	19.	6,200,839 B1	3/13/01	Batra et al.			
	20.	6,200,893	03/2001	Sneh			
	21.	6,200,893 B1	3/13/01	Wang et al.	438	685	3/13/01
	22.	6,203,613 B1	3/20/01	Gates et al.			
	23.	6,207,567 B1	3/27/01	Wang wt al.	438	685	4/12/99
	24.	6,225,213 B1	5/1/01	Urabe	438	627	1/22/98
	25.	6,270,572 B1	8/7/01	Kim et al.			
	26.	6,287,965	9/11/01	Yokoyama et al.	438	624	4/23/98
	27.	6,358,829	3/19/02	Yoon et al.			9/16/99

EXAMINER	DATE CONSIDERED

***EXAMINER:** INITIAL IF CITATION CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP 609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED, INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. IMEC182.001C1C1	APPLICATION NO. Unknown
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(USE SEVERAL SHEETS IF NECESSARY)	FILING DATE Herewith	GROUP Unknown

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
	28.	6,368,954	4/9/02	Lopatin et al.	438	627	7/28/00
	29.	6,391,785	05/2000	Satta et al.			
	30.	2001034123 (US published application 2001)	10/25/01	Jeon et al.	438	643	4/6/01

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
	31.	DE 196 27 017 A1	1/9/97	Germany				
	32.	DE 198 20 147 A1	1/7/99	Germany				
	33.	KR 2000054970	2/2/99	Korea				
	34.	WO 96/17107	6/6/96	PCT				
	35.	WO 99/41423	8/19/99	PCT				

EXAMINER INITIAL		**OTHER DOCUMENTS** (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
	36.	Abeles et al., "Amorphous Semiconductor Superlattices," Physical Review Letters, November 1983, Vol. 51, No. 21, pp. 2003-2006.
	37.	Bedair, S.M., "Selective-area and sidewall growth by atomic layer epitaxy," Semicond. Sci. Technol., Vol. 8, (1993), pp. 1052-1062.
	38.	Döscö et al., Research Institute for Materials Science – ATKI, H-1525 Budapest, Hungary; Utriainen et al., Laboratory of Inorganic and Analytical Chemistry, Helsinki University of Technology, FIN-02150 Espoo, Finland, "Deposition of Tin Oxide into Porous Silicon by Atomic Layer Epitaxy," J. Electrochem. Soc., February 1996, Vol. 143, No. 2, pp. 683-687.
	39.	Fazan et al., "A High-C Capacitor (20.4 fFμm^2) with Ultrathin CVD – Ta_2O_5 Films Deposited on Rugged Poly-Si for High Density DRAMs," IEEE, 1992, pp. IDEM 92-263-IDEM 92-266.
	40.	George et al. "Atomic layer deposition of tungsten on oxide surfaces" Book of Abstracts, 219th ACS Nat'l Meeting, SF, CA March 26-30 2000 published by American Chemical Society, Washington D.C.
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	43.	Kaizuka et al., "Conformal Chemical Vapor Deposition TiN (111) Film Formation as an Underlayer of Al for Highly Reliable Interconnects," Jpn. J. Appl. Phys., 1994, Vol. 33, pp. 470-474.
	44.	Kikkawa et al., "A Quarter-Micrometer Interconnection Technology Using a TiN/Al-Si-Cu/TiN/Al-Si-Cu/TiN/Ti Multilayer Structure," IEEE Transaction on Electron Devices, February 1993, Vol. 40, No. 2, pp. 296-302.
	45.	Kikkawa et al., "Al-Si-Cu/TiN multilayer interconnection and Al-Ge reflow sputtering technologies for quarter-micron devices," SPIE, 1992, Vol. 1805, pp. 54-64.
	46.	Kim et al., "Applicability of ALE TiN films as Cu/Si diffusion barriers" Thin Solid Films 372(1):276-283 (2000)
	47.	Kim et al., "Comparison of TiN and TiAlN as a Diffusion Barrier Deposited by Atomic Layer Deposition" Journal of the Korean Physical Society , 40(1), 176-179 (2002)
	48.	Klaus et al., "Atomic Layer Deposition of SiO_2 Using Catalyzed and Uncatalyzed Self-Limiting Surface Reactions," Surface Review and Letters, Vol. 6, Nos. 3 & 4 (1999) pp. 435-448.

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EXAMINER INITIAL		OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)
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	50.	Klaus et al., "Atomically controlled growth of tungsten and tungsten nitride using sequential surface reactions," Applied Surface Science, Vols. 162-163, pp. 479-491 (2000).
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	54.	Martensson et al., "Atomic Layer Epitaxy of Copper on Tantalum," Chemical Vapor Deposition, Vol. 3, No. 1, pp. 45-50 (1997).
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	58.	Min et al., "Atomic Layer Deposition of TiN Films by Sequential Introduction of Ti Precursor and NH_3," Materials Research Society, 1998, Vol. 514, pp. 337-343
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	60.	Min et al., "Metal-organic atomic-layer deposition of titanium-silicon-nitride films," Applied Physics Letters, Vol. 75, No. 11 pp. 1532-1523 (1999).
	61.	Niinistö et al., "Synthesis of oxide thin films and overlayers by atomic layer epitaxy for advanced applications, Materials Science and Engineering, 1996, Vol. B41, pp. 23-29.
	62.	Ritala et al., "Atomic Layer Epitaxy Growth of TiN Thin Films from TiI_4 and NH_3," J. Electrochem. Soc., August 1998, Vol. 145, No. 8, pp. 2914-2920.
	63.	Ritala et al., "Controlled Growth of TaN, Ta_3N_5, and TaO_xN_y Thin Films by Atomic Layer Deposition," Chem. Mater., 1999, Vol. 11, pp. 1712-1718.
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	68.	Solanki et al., 'Atomic Layer Deposition of Copper Seed Layers" Electrochem. and Solid State Lett. 3(10): 479-480 (2000)
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